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EXAMINER	
HO, THOMAS M	

ART UNIT	PAPER NUMBER
2134	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/597,974	ROBERTS ET AL.	
	Examiner	Art Unit	
	Thomas M Ho	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *28 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-59 are pending

Response to Arguments:

2. Applicant's arguments filed 5/13/04, with respect to the rejection(s)of claim(s) 1-59 under 35 USC § 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Tektronix, Inc. "SONET Telecommunications", previously cited.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tektronix, Inc. "SONET Telecommunications"

In reference to claim 1:

Tektronix, Inc. "SONET Telecommunications" discloses a method of validating a connection mapped between first and second end-nodes via at least one intermediate node in a communications network, where the validation arises from the internal connection validation mechanism of SONET packets, the method comprising steps of:

a) at the first end-node, inserting performance monitor (PM) information into a predetermined location within a data signal conveyed through the connection,

- the first end-node is the first PTE, (Figure 27, Point to Multipoint, p.22)
- Where the Performance monitor information has a predetermined location in the Section Overhead of the header. Tektronix "SONET Telecommunications" page 7, "Section Overhead"

b) at the at least one intermediate node, where the intermediate node is the SONET regenerator node. (Figure 26, p.22) & (Figure 27, p. 22)

iii) reinserting the buffered PM information into the predetermined location within the signal prior to transmitting the data signal toward the second end-node,b , where "Regenerator" p.19 discloses that the regenerator replaces the Section overhead, which contains the PM information page 7, "Section Overhead", thereby reinserting the data by rewriting it to the new signal to be transmitted.

Tektronix fails to explicitly state

i) extracting the PM information from the predetermined location within the signal received at the intermediate node.

ii) buffering the extracted PM information.

Tektronix however discloses that the PM information is located in a predetermined location within the signal at the section overhead. In order for the PM information to actually be of use, at some point in the communication, it would be necessary to extract it and analyze it for inconsistencies and errors. Once this data is extracted, it would have to be stored somewhere for comparison and analysis, thereby "buffering" the extracted PM information.

Tektronix appears to imply however, that some correction and performance monitoring extraction and comparison is performed at the Section overhead. For example. Figure 6 discloses Section overhead as the overhead used between the regenerator node and the PTE node. Furthermore, p.22 discloses under "Regenerator" that the regenerator clocks itself off the received signal, indicating that some reading or extraction of the data is performed. Furthermore, at the REG node, the Section overhead is replaced.

While it is not explicitly disclosed that extraction and buffering of the PM data in the Section overhead between the PTE node and REG node is performed, it would have been obvious to one of ordinary skill in the art at the time of invention to analyze (extracting and buffering) the performance monitoring data of the section overhead to make sure the signal had no errors in the transmission of the SONET signal between the PTE node and

the REG node, before rewriting it.

In reference to claim 2:

Tektronix, Inc. discloses a method wherein the data signal contains a SONET/SDH SPE and the step of inserting the PM information comprises a step of inserting the PM information into a predetermined location within a transport overhead (TOH) outside of the SPE, where the transport overhead is outside of the SPE (Tekronix, page 5, Figure 4 and **"STS-1 SPE in Interior of STS-1 Frames"),** and the PM information(Performance monitoring) is placed in the section overhead. (Tekronix, page 7, **"Section Overhead"**)

In reference to claim 3:

Tektronix, Inc. discloses a method wherein each node in the network is adapted to support a plurality of connection layers and the connection is mapped on one of the plurality of connection layers, where the connection layers are the Sections, Lines, and Paths. (Cover Sheet, **"SONET SYSTEM HIERARCHY"**)

In reference to claim 4:

Tektronix, Inc. discloses a method wherein PM information respecting each layer is inserted into a respective predetermined location of the TOH, where the PM information(Performance monitoring) is placed in the section overhead. (Tekronix, page 7, **"Section Overhead"**)

In reference to claim 5:

Tektronix, Inc. discloses a method wherein the step of inserting PM information comprises a step of inserting one or more of a Trace field; a Parity field; and an indicator field, where byte J0 and B1 of the section overhead contains a trace field and a parity field, and bytes H1 and H2 of the line overhead discloses an indicator field. (Tekronix, page 8, **"Table 3. Section Overhead", "Table 4. Line Overhead"**) Bytes J1 and B3 also disclose additional portions of the trace and parity. (Tekronix, page 9, **"Table 5. STS Path Overhead")**

In reference to claim 6:

Tektronix, Inc. discloses a method wherein the step of inserting a Trace field comprises inserting a nibble of a trace message for communicating information concerning the connection, where inserting the nibble of the trace message comes about with the construction of the STS-1 Frame. (Tekronix, page 8, **"Table 3. Section Overhead")**

In reference to claim 7:

Tektronix, Inc. discloses a method wherein the step of inserting the nibble of a trace message comprises a step of inserting successive nibbles of the trace message into respective successive signals until an entire trace message has been sent, where the trace byte J1 is inserted into respective successive signals, in each STS-1 frame. (Tekronix, page 9, **"Table 5. STS Path Overhead")**

In reference to claim 8:

Tektronix, Inc. discloses a method wherein the step of inserting a Trace field comprises

repeating the trace message after the entire trace message has been sent, where the trace message is repeated to verify continued connection to the intended transmitting terminal. (Tekronix, page 9, **"Table 5. STS Path Overhead")**

In reference to claim 9:

Tektronix, Inc. discloses a method wherein the step of inserting a parity field comprises a step of calculating a parity value in respect of a data signal, and inserting the parity value into a next data signal to be transmitted, where the parity value is calculated and placed in byte B3 (Tekronix, page 9, **"Table 5. STS Path Overhead")**

In reference to claim 10:

Tektronix, Inc. discloses a method wherein the data signal contains a SONET/SDH SPE and the parity value is a BIP-8, where the BIP-8 is B1. (Tekronix, page 11, **"Table 6. Anomalies, Defects, Failures")**

In reference to claim 11:

Tektronix, Inc. discloses a method wherein the parity value is calculated starting after an H2 byte of a transport overhead (TOH) portion of the signal, and incorporates all SPE bytes until the H2 byte of a next data signal, where the H2 byte is a part of the STS-1 pointer which depicts the offset value to the byte where the SPE begins, this "incorporating" all SPE bytes until the H2 byte of the next signal. (Tekronix, page 12, 3rd paragraph **)**

In reference to claim 12:

Tektronix, Inc. discloses a method wherein the step of inserting an indicator field comprises a step of accumulating an error count in respect of the data signal, where the indicator field that determines this is the Bit Error Rate. (Tekronix, page 27, Bit Error Rate)

Tektronix, Inc. "SONET Telecommunications"

In reference to claim 13:

Tektronix, Inc. discloses a method wherein the data signal is a SONET/SDH signal and the error count is a BIP-8, where each error is determined by BIP-8 (B1). (Tekronix, page 11, **"Table 6. Anomalies, Defects, Failures")**

In reference to claim 14:

Tektronix, Inc. discloses a method wherein the step of extracting the PM information comprises a step of extracting one or more of a trace field, a parity field, and an indicator field, where these bytes are extracted by a receiving node, and where byte J0 and B1 of the section overhead contains a trace field and a parity field, and bytes H1 and H2 of the line overhead discloses an indicator field. (Tekronix, page 8, **"Table 3. Section Overhead", "Table 4. Line Overhead")** Bytes J1 and B3 also disclose additional portions of the trace and parity. (Tekronix, page 9, **"Table 5. STS Path Overhead")**

In reference to claim 15:

Tektronix, Inc. discloses a method wherein the step of extracting a parity field further

comprises a step of calculating a parity value in respect of the received data signal, where the parity field is extracted in order to calculate transmission errors for the previous STS-N frame, already received. (Tekronix, page 8, **"Table 3. Section Overhead")**

In reference to claim 19:

Tektronix, Inc. discloses a method wherein the step of extracting an indicator field further comprises the steps of:

a) monitoring the indicator field of each successive received data signal, where the indicator fields are H1 and H2 to determine the starting point of the SPE.

b) asserting an AIS state if the indicator field of each of first predetermined number of successive data signals contains a first predetermined value, where the indicator bytes H1, and H2 are additionally used to detect STS path Alarm Indication Signals. (AIS-P) (Tekronix, page 8, **"Table 3. Section Overhead")**

In reference to claim 23:

Tektronix, Inc. discloses a method wherein the step of extracting an indicator field further comprises the steps of:

a) monitoring the indicator field of each successive received signal, where the signals are monitored for an AIS state.

b) asserting an RDI state if the indicator field of each of a second predetermined number of successive signals contains a second predetermined value, where the RDI state is asserted in the case of an AIS defect.

(Tekronix, page 11, **"Table 6. Anomalies, Defects, Failures")**

Claim 35 is rejected for the same reason as claim 1.

Claim 36 is rejected for the same reason as claim 2.

Claim 37 is rejected for the same reasons as claim 3.

Claim 38 is rejected for the same reasons as claim 4.

Claim 27, 39 is rejected for the same reasons as claim 5.

Claim 28, 40 is rejected for the same reasons as claim 6.

Claim 41 is rejected for the same reasons as claim 7.

Claim 42 is rejected for the same reasons as claim 8.

Claim 43 is rejected for the same reasons as claim 9.

Claim 44 is rejected for the same reasons as claim 10.

Claim 45 is rejected for the same reasons as claim 11.

Claim 46 is rejected for the same reasons as claim 12.

Claim 47 is rejected for the same reasons as claim 13.

Claim 32 is rejected for the same reasons as claim 14.

Claim 33 is rejected for the same reasons as claim 15.

Claim 30, 50, 58 is rejected for the same reasons as claim 19.

Claim 54 is rejected for the same reasons as claim 23.

In reference to claim 16:

Tektronix, Inc. "SONET Telecommunications" fails to explicitly disclose a method, further comprising the steps of:

a) comparing the recalculated parity value with a received parity value contained in the

extracted parity field to obtain an error count; and

b) XORing the error count with the received parity value.

The examiner takes official notice that computing parity values by comparing the calculated parity value against the received parity value is well known to those of ordinary skill in the art. Even bit parity computations would be XORed against an expected value. A value of 1 is returned if a certain bit is flipped. Although it cannot detect where, XORing can detect whether or not a single error has occurred. Examples of this appear in an Error Checking and Correction tutorial, provided by Samsung, and in this Introduction to Error Detection and Correction, by the University of New Brunswick.

It would have been obvious to one of ordinary skill in the art at the time of invention to compare the recalculated parity value with a received parity value and XORing the error count with the received parity value, in order to compute the whether the error count and determine if it was correct.

In reference to claim 18:

Tektronix, Inc. "SONET Telecommunications" discloses a method, further comprising a step of accumulating the error count value in respect of the received data signal, where the error count is accumulated in reference to a unit of time. (Tekronix, page 27, Bit Error Rate)

In reference to claim 20:

Tektronix, Inc. "SONET Telecommunications" fails to explicitly disclose a method,

further comprising a step of de-asserting the AIS state if the indicator field of each of the first predetermined number of successive data signals contains a value other than the first predetermined value.

The examiner takes official notice that it is well known to those of ordinary skill in the art to assert an alarm state when a certain condition is met, and to de-assert that when that condition is no longer present.

It would have been obvious to one of ordinary skill in the art at the time of invention to de-assert the AIS state if the indicator field of each of the first predetermined number of successive data signals contains a value other than the first predetermined value, because the signal should not be treated as if it was in an alarm state if in reality, it was not.

In reference to claim 21:

It would have been obvious to one of ordinary skill in the art at the time of invention to set the predetermined number successive data signals to three to achieve a balance between having too few successive states and not knowing whether the AIS should still persist, and having too many successive states and applying actions resulting from the AIS state persisting when it wasn't necessary.

In reference to claim 22:

It would have been obvious to one of ordinary skill in the art at the time of invention to set the first predetermined value is binary "1111", to have a binary state set as cause for

the AIS signal. Applicant appears to support this view on (page 7, lines 18- 23) that this number may be "1111" or may be set to a different value.

In reference to claim 26:

Tektronix, Inc. "SONET Telecommunications" fails to disclose a method wherein the step of buffering the extracted PM information comprises double-buffering the extracted PM information.

The examiner takes official notice that double buffering was well known to those of ordinary skill in the art at the time of invention with the advantage that more memory buffering could lead to faster performance and decrease latency due to insufficient buffer memory. Double buffering, frequently used in video memory has the advantage of decreasing memory swaps.

It would have been obvious to one of ordinary skill in the art at the time of invention to double buffer the extracted PM information for possible faster memory access.

Claim 17, 29, 48 is rejected for the same reasons as claim 16.

Claim 34, 49 is rejected for the same reasons as claim 18.

Claim 51 is rejected for the same reasons as claim 20.

Claim 24, 52 is rejected for the same reasons as claim 21.

Claim 25, 31, 53, 59 is rejected for the same reasons as claim 22.

Claim 55 is rejected for the same reasons as claim 24.

Claim 56 is rejected for the same reasons as claim 25.

Claim 57 is rejected for the same reasons as claim 26.

Conclusion

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of the final action and the advisory action is not mailed under after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension pursuant to 37 CFR 1.136(A) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas M Ho whose telephone number is (571)272-3835. The examiner can normally be reached on M-F from 8:30am – 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory A. Morse can be reached at (571)272-3838. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5484.

GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

TMH

December 29th, 2004